

REMARKS/ARGUMENTS

In response to the Office Action mailed January 11, 2005, Applicants amend their application and request reconsideration.

Claim 28 is added so that claims 1-28 are currently pending.

Support for new claim 28 may be found, e.g., in the specification at page 3, lines 21-22; page 4, lines 11-13 and original claim 1. In these passages, the specification describes the reinforcing composite layer 6 comprising reinforcing composite material. This reinforcing composite layer has a total thickness between 0.2-0.5 mm.

All claims have been reviewed and amended for clarity where needed.

Support for the amendments to claim 1 may be found, e.g., in the specification at page 4, lines 11-13 and in original claims 8 and 9.

Claims 1-5, 7, 8, 10, 12, 13 20, 22 and 24 were rejected under 35 U.S.C. § 102 as anticipated by U.S. Patent No. 5,352,507 to Bresson et al. (hereinafter, "Bresson").

Claims 6, 9, 11, 25 and 26 were rejected under 35 U.S.C. § 103 as unpatentable over Bresson.

Claims 14-19 were rejected under 35 U.S.C. § 103 as unpatentable over Bresson in view of U.S. Patent No. 5,754,931 to Castelli et al. (hereinafter, "Castelli").

Claim 21 was rejected under 35 U.S.C. § 103 as unpatentable over Bresson in view of U.S. Patent No. 6,699,419 to Kia et al. (hereinafter, "Kia").

Claim 23 was rejected under 35 U.S.C. § 103 as unpatentable over Bresson in view of U.S. Patent Publication No. 2002/0182328 to Asai et al. (hereinafter, "Asai").

Claim 27 was rejected under 35 U.S.C. § 103 as unpatentable over Bresson in view of U.S. Patent No. 4,061,818 to Duckett et al. (hereinafter, "Duckett").

Each of these rejections is separately and respectfully traversed.

Known printing sleeves include a radially internal rigid layer, often of metal (page 1, lines 3-5 of the patent application). These metal carrier layers prevent the formation of a wave or bulge near the nip during printing. The bulge can decrease printing quality and the life of the printing sleeve. These metal carrier layers, however, are costly and require a complicated manufacturing process (page 1, lines 6-7). Therefore, there is a need for printing blanket that can improve printing quality and preserve printing blanket life by preventing the

formation of a wave or bulge near the nip during printing, without the use of an internal metal carrier layer.

These objectives are realized in the printing blanket of amended claim 1, which comprises a printing layer, a compressible layer, and a circumferential stiffening layer having a thickness not exceeding 0.5 mm and a Young's modulus in the circumferential direction of at least 400 MPa. The stiffening layer is located between the compressible layer and printing layer.

A stiffening layer located between the compressible layer and the printing layer and having the claimed mechanical properties provides flexibility in the radial direction and stiffness along the circumferential direction. The flexibility in the radial direction provides a printing sleeve with high compressibility and allows a local deformation of the stiffening layer without generating a bulge near the nip. The rigidity in the circumferential direction along with the elasticity is necessary to maintain the strip of paper which is to be printed, to register colors and to immobilize the printing sleeve on the cylinder once the sleeve is installed (page 4, lines 15-17).

Bresson teaches, e.g., in Figure 2, an elastomer layer 5 between compressible layer 4 and printing layer 6. This elastomer layer 5 has a thickness of 1 mm (col. 8, lines 14-15), which far exceeds the thickness of the stiffening layer of the sleeve of amended claim 1. Because Bresson's elastomer layer 5 has a thickness that far exceeds the thickness recited in amended claim 1, Bresson cannot anticipate claim 1.

Amended claim 1 also requires that the stiffening layer have a Young's modulus in the circumferential direction of at least 400 MPa. Nowhere does Bresson disclose that the layers 7 or 7a have a Young's modulus in the circumferential direction of at least 400 MPa. Therefore, Bresson does not disclose a stiffening layer having the claimed characteristics of the printing sleeve defined by amended claim 1.

The claimed printing sleeve is rigid enough to make unnecessary a metal carrier in the sleeve or adhering of the sleeve to the cylinder. Rather, the claimed printing sleeve is rigid enough to be readily removable from the cylinder. In contrast to the claimed invention, printing sleeves disclosed in Bresson include a metal carrier or are adhered to a cylinder. In Figure 2, for example, the compressible layer 4 is adhered directly to the metal printing cylinder 1 with an adhering layer 3 (col. 4, lines 39-40). In Figure 3, for example, the compressible layer 4 is secured to a metal carrier sleeve 10 with an adhesive layer 9 (col. 5,

lines 53-61). The embodiments disclosed in Figures 4-7 of Bresson “may be mounted upon a carrier and/or cylinder (such as shown in Fig. 3)” and use of adhesives is generally recommended (column 10, lines 38-39; Figures 2 and 3). In Figure 8 of Bresson, the internal compressible layer is adhered to the metal carrier 10 with adhesive layer 3 (col. 8, lines 46-49).

Thus, because Bresson does not disclose or suggest a circumferential stiffening layer having a thickness not exceeding 0.5 mm and a Young’s modulus in the circumferential direction of at least 400 MPa, as claimed in amended claim 1, the rejection under 35 U.S.C. § 102 based on Bresson cannot be maintained. Furthermore, the claimed invention cannot be obvious over Bresson because Bresson does not suggest a stiffening layer having the claimed mechanical properties such that the printing sleeve does not have to be adhered to a carrier or a cylinder in order to be used.

Because the rejections of the dependent claims as obvious under 35 U.S.C. § 103 rely on the propriety of the rejection of independent claim 1, the rejections for obviousness of those claims fall with the failure of the rejection of claim 1. Castelli, Kia, Asai, and Duckett do not disclose nor suggest a stiffening layer having the claimed mechanical properties and located between the compressible layer and printing layer, as in the claimed printing sleeve.

The Office Action rejected claim 21 over Bresson in view of Kia on the grounds that it would have been obvious to one of ordinary skill in the art to provide the printing sleeve of Bresson with the release agent and gel coat layer as taught by Kia. Kia is directed to a method of producing a textured surface, such as recreational vehicle composite panels, through the use of a mold (col. 1, lines 7-16; col. 1, lines 24-25; col. 2, lines 46-49). Such a method of making textured surfaces on a composite article through the use of a mold is a very different field of endeavor from the printing sleeve field of the present invention. Therefore, one of ordinary skill in the art of printing sleeves would not be led to modify the printing sleeve of Bresson in view of Kia. Furthermore, Kia teaches that the gel coat layer 14 defines the textured surface of the article 12 (Figure 1; col. 4, lines 38-42; col. 3, lines 52-56). One of ordinary skill in the art of printing sleeves, who is concerned with the preventing bulges and waves near the nip during printing, would not be led to use the gel taught by Kia that is specifically designed to create textured surfaces.

New claim 28 is patentable over each of the cited references. Bresson teaches printing sleeves having an elastomer layer 5 having a thickness of 1 mm and elastomer layers

7 and 7a, having thicknesses of 0.1 to 0.5 mm (col. 8, lines 14-16). The elastomer layers disclosed in Bresson provide material having a total minimum thickness of 1 mm and a maximum total thickness of 2 mm. These total thicknesses far exceed the thickness of the reinforcing composite material claimed in claim 28. None of the other cited references disclose or suggest a circumferential reinforcing composite material located between the compressible layer and the printing layer and having the thickness and Young's modulus claimed in claim 28.

For the reasons set forth above, claims 1-28 are patentable over each of the cited references. Reconsideration and allowance of claims 1-28 are earnestly solicited.

Respectfully submitted,

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